

Pedram Khalili Amiri

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

132 papers	5,292 citations	38 h-index	69 g-index
144 ext. papers	6,197 ext. citations	4.8 avg, IF	5.55 L-index

#	Paper	IF	Citations
132	A 3 pJ/bit free space optical interlink platform for self-powered tetherless sensing and opto-spintronic RF-to-optical transduction. <i>Scientific Reports</i> , 2021 , 11, 8504	4.9	
131	Observation of current-induced switching in non-collinear antiferromagnetic IrMn by differential voltage measurements. <i>Nature Communications</i> , 2021 , 12, 3828	17.4	6
130	Field-free spin-orbit torque-induced switching of perpendicular magnetization in a ferrimagnetic layer with a vertical composition gradient. <i>Nature Communications</i> , 2021 , 12, 4555	17.4	19
129	Adaptive MRAM Write and Read with MTJ Variation Monitor. <i>IEEE Transactions on Emerging Topics in Computing</i> , 2021 , 9, 402-413	4.1	5
128	The promise of spintronics for unconventional computing. <i>Journal of Magnetism and Magnetic Materials</i> , 2021 , 521, 167506	2.8	18
127	Implementation of Artificial Neural Networks Using Magnetoresistive Random-Access Memory-Based Stochastic Computing Units. <i>IEEE Magnetics Letters</i> , 2021 , 12, 1-5	1.6	2
126	3D Ferrimagnetic Device for Multi-Bit Storage and Efficient In-Memory Computing. <i>IEEE Electron Device Letters</i> , 2021 , 42, 152-155	4.4	4
125	Microstrip Array Ring FETs with 2D p-Ga2O3 Channels Grown by MOCVD. <i>Photonics</i> , 2021 , 8, 578	2.2	0
124	Fast and programmable locomotion of hydrogel-metal hybrids under light and magnetic fields. <i>Science Robotics</i> , 2020 , 5,	18.6	55
123	Perpendicular magnetization switching by large spin-orbit torques from sputtered Bi2Te3. <i>Chinese Physics B</i> , 2020 , 29, 078505	1.2	14
122	Electrical manipulation of the magnetic order in antiferromagnetic PtMn pillars. <i>Nature Electronics</i> , 2020 , 3, 92-98	28.4	29
121	Dynamics of domain-wall motion driven by spin-orbit torque in antiferromagnets. <i>Physical Review B</i> , 2020 , 101,	3.3	19
120	Domain periodicity in an easy-plane antiferromagnet with Dzyaloshinskii-Moriya interaction. <i>Physical Review B</i> , 2020 , 102,	3.3	3
119	Experimental Demonstration of Spintronic Broadband Microwave Detectors and Their Capability for Powering Nanodevices. <i>Physical Review Applied</i> , 2019 , 11,	4.3	32
118	Control of Spin-Wave Damping in YIG Using Spin Currents from Topological Insulators. <i>Physical Review Applied</i> , 2019 , 11,	4.3	17
117	Colossal electric field control of magnetic anisotropy at ferromagnetic interfaces induced by iridium overlayer. <i>Physical Review B</i> , 2019 , 99,	3.3	11
116	Picosecond Electric-Field-Induced Switching of Antiferromagnets. <i>Physical Review Applied</i> , 2019 , 11,	4.3	9

115	Enhanced Broad-band Radio Frequency Detection in Nanoscale Magnetic Tunnel Junction by Interface Engineering. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 29382-29387	9.5	8
114	Predictive Materials Design of Magnetic Random-Access Memory Based on Nanoscale Atomic Structure and Element Distribution. <i>Nano Letters</i> , 2019 , 19, 8621-8629	11.5	9
113	Voltage-Controlled Magnetic Anisotropy in Heterostructures with Atomically Thin Heavy Metals. <i>Physical Review Applied</i> , 2019 , 12,	4.3	12
112	Analysis and Compact Modeling of Magnetic Tunnel Junctions Utilizing Voltage-Controlled Magnetic Anisotropy. <i>IEEE Transactions on Magnetics</i> , 2018 , 54, 1-9	2	16
111	A Dual-Data Line Read Scheme for High-Speed Low-Energy Resistive Nonvolatile Memories. <i>IEEE Transactions on Very Large Scale Integration (VLSI) Systems</i> , 2018 , 26, 272-279	2.6	3
110	Room-Temperature Skyrmions in an Antiferromagnet-Based Heterostructure. <i>Nano Letters</i> , 2018 , 18, 980-986	11.5	68
109	Spin-Torque Ferromagnetic Resonance in W/CoFeB/W/CoFeB/MgO Stacks. <i>Physical Review Applied</i> , 2018 , 10,	4.3	15
108	. <i>IEEE Journal of Quantum Electronics</i> , 2018 , 54, 1-5	2	5
107	Ultrahigh detection sensitivity exceeding 105 V/W in spin-torque diode. <i>Applied Physics Letters</i> , 2018 , 113, 102401	3.4	29
106	Giant interfacial perpendicular magnetic anisotropy in MgO/CoFe/capping layer structures. <i>Applied Physics Letters</i> , 2017 , 110, 072403	3.4	53
105	A Word Line Pulse Circuit Technique for Reliable Magnetoelectric Random Access Memory. <i>IEEE Transactions on Very Large Scale Integration (VLSI) Systems</i> , 2017 , 25, 2027-2034	2.6	11
104	Joule Heating Effect on Field-Free Magnetization Switching by Spin-Orbit Torque in Exchange-Biased Systems. <i>Physical Review Applied</i> , 2017 , 7,	4.3	29
103	Enhancement of voltage-controlled magnetic anisotropy through precise control of Mg insertion thickness at CoFeB/MgO interface. <i>Applied Physics Letters</i> , 2017 , 110, 052401	3.4	64
102	Array-Level Analysis of Magneto-Electric Random-Access Memory for High-Performance Embedded Applications. <i>IEEE Magnetics Letters</i> , 2017 , 8, 1-5	1.6	2
101	Design of high-throughput and low-power true random number generator utilizing perpendicularly magnetized voltage-controlled magnetic tunnel junction. <i>AIP Advances</i> , 2017 , 7, 055934	1.5	23
100	Perpendicular magnetic tunnel junction with W seed and capping layers. <i>Journal of Applied Physics</i> , 2017 , 121, 153902	2.5	17
99	Write Error Rate and Read Disturbance in Electric-Field-Controlled Magnetic Random-Access Memory. <i>IEEE Magnetics Letters</i> , 2017 , 8, 1-5	1.6	22
98	Hybrid VC-MTJ/CMOS non-volatile stochastic logic for efficient computing 2017 ,		7

97	Efficient Excitation of High-Frequency Exchange-Dominated Spin Waves in Periodic Ferromagnetic Structures. <i>Physical Review Applied</i> , 2017 , 7,	4.3	17
96	A Spintronic Voltage-Controlled Stochastic Oscillator for Event-Driven Random Sampling. <i>IEEE Electron Device Letters</i> , 2017 , 38, 281-284	4.4	9
95	Room-Temperature Skyrmion Shift Device for Memory Application. <i>Nano Letters</i> , 2017 , 17, 261-268	11.5	160
94	Analog to Stochastic Bit Stream Converter Utilizing Voltage-Assisted Spin Hall Effect. <i>IEEE Electron Device Letters</i> , 2017 , 38, 1343-1346	4.4	11
93	Partial spin absorption induced magnetization switching and its voltage-assisted improvement in an asymmetrical all spin logic device at the mesoscopic scale. <i>Applied Physics Letters</i> , 2017 , 111, 052407	3.4	12
92	A 65-nm ReRAM-Enabled Nonvolatile Processor With Time-Space Domain Adaption and Self-Write-Termination Achieving > 4 times \times Faster Clock Frequency and > 6 times \times Higher Restore Speed. <i>IEEE Journal of Solid-State Circuits</i> , 2017 , 52, 2769-2785	5.5	7
91	Large voltage-controlled magnetic anisotropy in the SrTiO ₃ /Fe/Cu structure. <i>Applied Physics Letters</i> , 2017 , 111, 152403	3.4	13
90	. <i>IEEE Journal of Solid-State Circuits</i> , 2017 , 52, 2194-2207	5.5	26
89	The impact of Hf layer thickness on the perpendicular magnetic anisotropy in Hf/CoFeB/MgO/Ta films. <i>Journal of Alloys and Compounds</i> , 2017 , 694, 76-81	5.7	5
88	Effects of annealing on the magnetic properties and microstructures of Ta/Mo/CoFeB/MgO/Ta films. <i>Journal of Alloys and Compounds</i> , 2017 , 692, 243-248	5.7	15
87	Leveraging nMOS Negative Differential Resistance for Low Power, High Reliability Magnetic Memory. <i>IEEE Transactions on Electron Devices</i> , 2017 , 64, 4084-4090	2.9	3
86	MTJ variation monitor-assisted adaptive MRAM write 2016 ,		12
85	. <i>Proceedings of the IEEE</i> , 2016 , 104, 1974-2008	14.3	36
84	Strong Rashba-Edelstein Effect-Induced Spin-Orbit Torques in Monolayer Transition Metal Dichalcogenide/Ferromagnet Bilayers. <i>Nano Letters</i> , 2016 , 16, 7514-7520	11.5	181
83	Oscillatory magnetic anisotropy and spin-reorientation induced by heavy-metal cap in Cu/FeCo/M (M=Hf or Ta): A first-principles study. <i>Physical Review B</i> , 2016 , 94,	3.3	3
82	2016 ,		32
81	Source Line Sensing in Magneto-Electric Random-Access Memory to Reduce Read Disturbance and Improve Sensing Margin. <i>IEEE Magnetism Letters</i> , 2016 , 7, 1-5	1.6	10
80	Low-Power, High-Density Spintronic Programmable Logic With Voltage-Gated Spin Hall Effect in Magnetic Tunnel Junctions. <i>IEEE Magnetism Letters</i> , 2016 , 7, 1-5	1.6	10

79	Room-Temperature Creation and Spin-Orbit Torque Manipulation of Skyrmions in Thin Films with Engineered Asymmetry. <i>Nano Letters</i> , 2016 , 16, 1981-8	11.5	211
78	Magnetic Tunnel Junctions and Their Applications in Non-volatile Circuits 2016 , 1127-1171		
77	Giant spin-torque diode sensitivity in the absence of bias magnetic field. <i>Nature Communications</i> , 2016 , 7, 11259	17.4	89
76	Competing effect of spin-orbit torque terms on perpendicular magnetization switching in structures with multiple inversion asymmetries. <i>Scientific Reports</i> , 2016 , 6, 23956	4.9	18
75	Ultra-low switching energy and scaling in electric-field-controlled nanoscale magnetic tunnel junctions with high resistance-area product. <i>Applied Physics Letters</i> , 2016 , 108, 012403	3.4	131
74	Spin-torque ferromagnetic resonance measurements utilizing spin Hall magnetoresistance in W/Co40Fe40B20/MgO structures. <i>Applied Physics Letters</i> , 2016 , 109, 202404	3.4	24
73	Influence of inserted Mo layer on the thermal stability of perpendicularly magnetized Ta/Mo/Co20Fe60B20/MgO/Ta films. <i>AIP Advances</i> , 2016 , 6, 045107	1.5	8
72	In-plane current-driven spin-orbit torque switching in perpendicularly magnetized films with enhanced thermal tolerance. <i>Applied Physics Letters</i> , 2016 , 108, 212406	3.4	23
71	Electric-field-driven magnetization switching and nonlinear magnetoelasticity in Au/FeCo/MgO heterostructures. <i>Scientific Reports</i> , 2016 , 6, 29815	4.9	38
70	Effect of heavy metal layer thickness on spin-orbit torque and current-induced switching in Hf[CoFeB]/MgO structures. <i>Applied Physics Letters</i> , 2016 , 109, 022403	3.4	27
69	Enhanced voltage-controlled magnetic anisotropy in magnetic tunnel junctions with an MgO/PZT/MgO tunnel barrier. <i>Applied Physics Letters</i> , 2016 , 108, 112402	3.4	24
68	Spin-orbit torques in perpendicularly magnetized Ir22Mn78/Co20Fe60B20/MgO multilayer. <i>Applied Physics Letters</i> , 2016 , 109, 222401	3.4	51
67	In-plane magnetic field effect on switching voltage and thermal stability in electric-field-controlled perpendicular magnetic tunnel junctions. <i>AIP Advances</i> , 2016 , 6, 075014	1.5	15
66	A ReRAM-based single-NVM nonvolatile flip-flop with reduced stress-time and write-power against wide distribution in write-time by using self-write-termination scheme for nonvolatile processors in IoT era 2016 ,		12
65	Comparative Evaluation of Spin-Transfer-Torque and Magnetoelectric Random Access Memory. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , 2016 , 6, 134-145	5.2	58
64	Strain-induced modulation of perpendicular magnetic anisotropy in Ta/CoFeB/MgO structures investigated by ferromagnetic resonance. <i>Applied Physics Letters</i> , 2015 , 106, 072402	3.4	63
63	The computer chip that never forgets. <i>IEEE Spectrum</i> , 2015 , 52, 30-56	1.7	9
62	Magnetic Tunnel Junctions and Their Applications in Nonvolatile Circuits 2015 , 1-36		2

61	. <i>IEEE Transactions on Magnetism</i> , 2015 , 51, 1-7	2	72
60	Electric Control of Magnetic Devices for Spintronic Computing 2015 , 53-112		
59	Effect of the oxide layer on current-induced spin-orbit torques in Hf CoFeB MgO and Hf CoFeB TaOx structures. <i>Applied Physics Letters</i> , 2015 , 106, 032406	3-4	51
58	The influence of an MgO nanolayer on the planar Hall effect in NiFe films. <i>Journal of Applied Physics</i> , 2015 , 117, 123908	2-5	4
57	Current-induced spin-orbit torque switching of perpendicularly magnetized Hf CoFeB MgO and Hf CoFeB TaOx structures. <i>Applied Physics Letters</i> , 2015 , 106, 162409	3-4	48
56	. <i>IEEE Nanotechnology Magazine</i> , 2015 , 14, 992-997	2-6	39
55	Strain control magnetocrystalline anisotropy of Ta/FeCo/MgO heterostructures. <i>Journal of Applied Physics</i> , 2015 , 117, 17B518	2-5	10
54	Design of a Fast and Low-Power Sense Amplifier and Writing Circuit for High-Speed MRAM. <i>IEEE Transactions on Magnetism</i> , 2015 , 51, 1-7	2	12
53	Giant voltage modulation of magnetic anisotropy in strained heavy metal/magnet/insulator heterostructures. <i>Physical Review B</i> , 2015 , 92,	3-3	69
52	Electric-field guiding of magnetic skyrmions. <i>Physical Review B</i> , 2015 , 92,	3-3	68
51	Thermally stable voltage-controlled perpendicular magnetic anisotropy in Mo CoFeB MgO structures. <i>Applied Physics Letters</i> , 2015 , 107, 142403	3-4	39
50	Strain-mediated 180° perpendicular magnetization switching of a single domain multiferroic structure. <i>Journal of Applied Physics</i> , 2015 , 118, 014101	2-5	31
49	Magneto-optical investigation of spin-orbit torques in metallic and insulating magnetic heterostructures. <i>Nature Communications</i> , 2015 , 6, 8958	17-4	55
48	Electric-field-induced spin wave generation using multiferroic magnetoelectric cells. <i>Applied Physics Letters</i> , 2014 , 104, 082403	3-4	125
47	Switching of perpendicular magnetization by spin-orbit torques in the absence of external magnetic fields. <i>Nature Nanotechnology</i> , 2014 , 9, 548-54	28-7	569
46	Low-power MRAM for nonvolatile electronics: Electric field control and spin-orbit torques 2014 ,		6
45	Electric field control and effect of Pd capping on magnetocrystalline anisotropy in FePd thin films: A first-principles study. <i>Physical Review B</i> , 2014 , 89,	3-3	33
44	Magnetization switching through spin-Hall-effect-induced chiral domain wall propagation. <i>Physical Review B</i> , 2014 , 89,	3-3	105

43	Temperature dependence of the voltage-controlled perpendicular anisotropy in nanoscale MgO CoFeB Ta magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2014 , 104, 112410	3.4	92
42	Current-driven perpendicular magnetization switching in Ta/CoFeB/[TaOx or MgO/TaOx] films with lateral structural asymmetry. <i>Applied Physics Letters</i> , 2014 , 105, 102411	3.4	61
41	Electric-field-induced thermally assisted switching of monodomain magnetic bits. <i>Journal of Applied Physics</i> , 2013 , 113, 013912	2.5	24
40	Ultralow-current-density and bias-field-free spin-transfer nano-oscillator. <i>Scientific Reports</i> , 2013 , 3, 1426.9	4.9	130
39	Diode-MTJ Crossbar Memory Cell Using Voltage-Induced Unipolar Switching for High-Density MRAM. <i>IEEE Electron Device Letters</i> , 2013 , 34, 753-755	4.4	26
38	Low-power non-volatile spintronic memory: STT-RAM and beyond. <i>Journal Physics D: Applied Physics</i> , 2013 , 46, 074003	3	308
37	Electric field induced domain-wall dynamics: Depinning and chirality switching. <i>Physical Review B</i> , 2013 , 88,	3.3	5
36	Deviation from exponential decay for spin waves excited with a coplanar waveguide antenna. <i>Applied Physics Letters</i> , 2012 , 101, 252409	3.4	7
35	Spin-Torque Driven Switching Probability Density Function Asymmetry. <i>IEEE Transactions on Magnetism</i> , 2012 , 48, 3818-3820	2	22
34	Reduction of switching current density in perpendicular magnetic tunnel junctions by tuning the anisotropy of the CoFeB free layer. <i>Journal of Applied Physics</i> , 2012 , 111, 07C907	2.5	26
33	The influence of in-plane ferroelectric crystal orientation on electrical modulation of magnetic properties in Co ₆₀ Fe ₂₀ B ₂₀ /SiO ₂ /(011) xPb(Mg _{1/3} Nb _{2/3})O ₃ -(1-x)PbTiO ₃ heterostructures. <i>Journal of Applied Physics</i> , 2012 , 112, 033916	2.5	4
32	2012,		50
31	Nanoscale magnetic tunnel junction sensors with perpendicular anisotropy sensing layer. <i>Applied Physics Letters</i> , 2012 , 101, 062412	3.4	38
30	VOLTAGE-CONTROLLED MAGNETIC ANISOTROPY IN SPINTRONIC DEVICES. <i>Spin</i> , 2012 , 02, 1240002	1.3	95
29	Voltage-induced ferromagnetic resonance in magnetic tunnel junctions. <i>Physical Review Letters</i> , 2012 , 108, 197203	7.4	199
28	Magnetic bit stability: Competition between domain-wall and monodomain switching. <i>Applied Physics Letters</i> , 2012 , 100, 212406	3.4	4
27	Magneto-electric tuning of the phase of propagating spin waves. <i>Applied Physics Letters</i> , 2012 , 101, 022409	3.4	27
26	. <i>IEEE Magnetism Letters</i> , 2012 , 3, 3000304-3000304	1.6	4

25	High-power coherent microwave emission from magnetic tunnel junction nano-oscillators with perpendicular anisotropy. <i>ACS Nano</i> , 2012 , 6, 6115-21	16.7	114
24	GUEST EDITORIAL RECENT PROGRESS IN SPINTRONIC DEVICES. <i>Spin</i> , 2012 , 02, 1202001	1.3	
23	Sub-200 ps spin transfer torque switching in in-plane magnetic tunnel junctions with interface perpendicular anisotropy. <i>Journal Physics D: Applied Physics</i> , 2012 , 45, 025001	3	38
22	Quantitative analysis of electric field induced change in anisotropy field in Co ₆₀ Fe ₂₀ B ₂₀ /(011) xPb(Mg _{1/3} Nb _{2/3})O ₃ -(1-x)PbTiO ₃ (x ~ 0.68) heterostructures. <i>Applied Physics Letters</i> , 2012 , 101, 202404	3.4	6
21	Low writing energy and sub nanosecond spin torque transfer switching of in-plane magnetic tunnel junction for spin torque transfer random access memory. <i>Journal of Applied Physics</i> , 2011 , 109, 07C720	2.5	87
20	Switching current reduction using perpendicular anisotropy in CoFeB/MgO magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2011 , 98, 112507	3.4	151
19	Effect of resistance-area product on spin-transfer switching in MgO-based magnetic tunnel junction memory cells. <i>Applied Physics Letters</i> , 2011 , 98, 072512	3.4	41
18	. <i>IEEE Electron Device Letters</i> , 2011 , 32, 57-59	4.4	45
17	Deep subnanosecond spin torque switching in magnetic tunnel junctions with combined in-plane and perpendicular polarizers. <i>Applied Physics Letters</i> , 2011 , 98, 102509	3.4	76
16	Spin wave functions nanofabric update 2011 ,		17
15	Thermal stability characterization of magnetic tunnel junctions using hard-axis magnetoresistance measurements. <i>Journal of Applied Physics</i> , 2011 , 109, 07C708	2.5	7
14	Enhancement of microwave emission in magnetic tunnel junction oscillators through in-plane field orientation. <i>Applied Physics Letters</i> , 2011 , 99, 032503	3.4	37
13	Electrical control of reversible and permanent magnetization reorientation for magnetoelectric memory devices. <i>Applied Physics Letters</i> , 2011 , 98, 262504	3.4	135
12	Nonreciprocal Spin Waves in Co-Ta-Zr Films and Multilayers. <i>IEEE Transactions on Magnetism</i> , 2009 , 45, 4215-4218	2	5
11	Integrated Microstrip Lines With Co/Ta/Zr Magnetic Films. <i>IEEE Transactions on Magnetism</i> , 2008 , 44, 3103-3106	2	3
10	Experimental Determination of the Nonuniform Shape-Induced Anisotropy Field in Thin NiFe Films. <i>IEEE Transactions on Magnetism</i> , 2007 , 43, 1880-1883	2	6
9	Ferromagnetic Thin Films for Loss Reduction in On-Chip Transmission Lines. <i>IEEE Transactions on Magnetism</i> , 2007 , 43, 2630-2632	2	3
8	Nonreciprocal spin wave spectroscopy of thin NiFe stripes. <i>Applied Physics Letters</i> , 2007 , 91, 062502	3.4	35

7	High-resistivity nanogranular CoAlO films for high-frequency applications. <i>Journal of Applied Physics</i> , 2007 , 101, 09M508	2.5	1
6	Magnetostatic waves in layered materials and devices. <i>Journal of Applied Physics</i> , 2006 , 100, 103909	2.5	4
5	Tight-Binding Analysis of Coupled Dielectric Waveguide Structures. <i>Fiber and Integrated Optics</i> , 2006 , 25, 11-27	0.8	2
4	On science, politics and simulations. <i>IEEE Potentials</i> , 2005 , 24, 6-8	1	
3	A model reduction based approach for extracting the diffusion and generation terms of pn junction leakage current. <i>Semiconductor Science and Technology</i> , 2003 , 18, 234-240	1.8	1
2	Quantum computers. <i>IEEE Potentials</i> , 2002 , 21, 6-9	1	9